

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 19, 2010

TO: T. J. Dwyer, Technical Director
FROM: W. Linzau and R. Quirk, Hanford Site Representatives
SUBJECT: Hanford Activity Report for the Week Ending February 19, 2010

Board staff member R. Raabe was on-site to observe a panel of experts reviewing the technical basis for packaging and drying the knock-out pot sludge.

Waste Treatment Plant: The Office of River Protection (ORP) provided conditional approval of an Authorization Basis Amendment Request (ABAR) that revises the design criteria to address hazards from hydrogen in piping and ancillary vessels (HPAV). The condition of approval limits the application of these design criteria to the Pretreatment facility and the criteria cannot yet be applied to the High Level Waste facility. The design criteria employ results from testing and analysis to supplement and tailor the ASME code, but the project believes this is not a deviation from the code and does not require a code inquiry or a code case. Some of the notable changes that are presented in the ABAR and ORP's Safety Evaluation Report are: the new criteria for HPAV only apply to piping and components and not ancillary vessels; preventive controls outside black cells and hard-to-reach areas need not be classified as safety-related; and the application of single-failure criteria is no longer based on potential consequences, but rather the application is based on the component classification as safety-class. In addition, the ABAR includes an exception from ASME B31.3 because pressure from an HPAV event will exceed the pressure being applied during leak testing. The ABAR includes the contractor's responses to comments from the Board's staff and these responses are used to supplement the justification of the new criteria. However, the staff only recently received the ABAR and some of the supporting documentation, and they are still evaluating the adequacy of the approach.

Tank Farms: The contractor issued a report that captured the problems noted during the data-gathering phase for an assessment of the readiness for implementing major changes to the Documented Safety Analysis (DSA) and Technical Safety Requirements (TSR). The team's assessment was not formally started because the contractor did not formally declare they were ready (see Activity Report 2/12/10), but the team concluded it was necessary to document their preliminary observations because of their significance. The report includes 12 pre- and 13 post-implementation issues, such as: the plan to implement the changes did not include adequate provisions to verify the flowdown of DSA requirements and TSRs into procedures; and operating restrictions identified in the facility description in the DSA need to be captured in the TSR document. In response to the issues, the contractor formed four small teams, each with a nuclear safety and an operations representative, to ensure all DSA requirements are adequately captured in the appropriate implementing procedures. If no additional significant problems are identified by the four teams, senior contractor management believes the assessment of readiness will re-start in mid-March, and the changes to the DSA and TSR will be implemented by the end of March. ORP is also performing an assessment in parallel with the contractor and ORP's assessment will resume when the contractor resumes their assessment.

ORP extended the Justification for Continued Operation (JCO) that addressed operating the waste transfer pump in tank AN-101 without adequate over-pressure protection. The letter extending the JCO notes that ORP is still evaluating two options for the potential over-speed of pumps powered by variable frequency drives (VFDs): a specific administrative control for properly setting the VFD maximum speed, or installing an external high-frequency trip device.